Message

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Sent: 1/20/2021 10:24:53 PM
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Subject: Lake Conestee / Reedy River SI

Jason / Robert

I've deluged you with supplemental information, available to you via Dropbox. Please let me know if you have any questions, or difficulty getting to those items.
I've also responded on 210119 to your questions regarding usage at LCNP, and measures in place to protect patrons.
Here are a few summary points for your consideration.

1. As to your team's sampling of the Lake Conestee Site, in August, please be aware that One of the files that I made available on Dropbox, *"LC-LakeConestee-Changes-2003-2020-compiled210118.pptx.pdf"* provides some quick screen shots of aerial images of representative areas of the former lake, on which I made some quick calculations.
2. At the bottom of a 65 sq.mi. rapidly urbanizing watershed, LC is receiving on the order 12,812 c.y. (17,295 tons) of sediment per year that accrete in the lake. This is based on areas that have converted from water area to terrestrial. That converts to roughly 1.1 ft of average deposition over the 20 years since the original sampling in 2001. That is based only on change in area, not total flux of sediment down the river via bedload and suspended load.
3. Based on benchmark comparisons, these numbers are reasonable for an inner Piedmont reservoir in an urban watershed. Obviously deposition is extremely variable, and some areas are likely getting scoured.
4. Areas that are still under water at top-of-dam impounded conditions, as well as those impounded by beaver dams within the old lake area are experiencing deposition and accretion in most areas.
5. **This observation is profoundly relevant to interpretation of your results from the lake area. The media that your team sampled in**

many cases is not the same media that we sampled in 2001-2003, but rather may well be sediment that has been deposited since.

6. Also, due to extremely intense beaver activity in the largest lobe of the lake, the West Bay, these areas are under 2 to 6 ft of water/sediment that have accumulated in three step pools behind dams that stack the water level about 2+/- ft behind each dam. In fact the 1997 aerial *(referenced above)* shows that large areas of the West Bay were forested at that time, and per the most recent imagery is now an aquatic/emergent wetland area.
7. **These observations affirm that the 'remedy' we selected as a Site management strategy during the TBA and negotiation of the Restrictive Covenant (2007), were sound and have been effective.**
8. **The components of that remedy were 1) containment by maintaining the dam in good condition in perpetuity, 2) continued natural capping by incoming sediment, 3) monitored natural recovery, and 4) institutional and educational measures to protect patrons of the nature preserve.**
9. The obvious weak link is the dam. And, perpetuity is a long time.
10. **What is at risk if/when dam failure occurs is loss of not just the surficial sediment but deep strata which have dramatically higher concentrations of PAHs and other CoCs.**
11. Some of the presentations provided show imagery from 2000-2001 when the penstock orifice was completely open *(technically a dam failure already underway when CF acquired the dam in Sep 2000).*
12. I supervised the repair of this open orifice *(via a temporary penstock 'patch')* in Jun 2001 with assistance from SCDHEC (Doug Bryant) and NRCS. This temporary patch is still in place 20 years later.
13. **During the 12 months *(Jun 2000-Jun 2001)* the dam was open wide, we lost 92,000 cy of sediment *(and all of the associated entrained CoCs)* from the canyon that eroded through the reservoir sediments.** This was based on two surveys by NRCS.
14. Our downstream Reedy River sampling from the TBA confirmed the presence of highly elevated levels of CoCs, as did your August sampling.

15. **The point is all of the datasets from all of the sampling programs, including the TBA Phases 1 and 2, should be evaluated as a part of your SI analysis.**
16. Another point is that there have been an unknown number of major releases from Lake Conestee previously, during mill operations from 1892-1970 when sluice gates were periodically opened to flush sediment from behind the dam, and also the 2000-2001 event.
17. **So the risk of this Site is not just what is there on top, but what has and may be released catastrophically on some unknown future date.**
18. As to sources of contamination, there are indeed hundreds or thousands of sites in the 65 sq.mi. watershed upstream of the dam where industrial contaminants were discharged historically, especially during the pre-regulatory decades.
19. The vast majority of those were comparatively small quantities, and of less toxic CoCs.
20. The vast majority of those pollution sources are long since out of business or bankrupt.
21. There is little question where the likely sources of certain major risk-driving CoCs originated. **The two MGPs were engaged in industrial processes that produced valuable energy products, but also produced huge masses of PAHs, including the seven CPAHs, among other CoCs.** Some of the files shared present some of my personal working-analysis-in-process that illustrate the comparative conditions in the headwaters, downstream of these MGPs, and in Lake Conestee.
22. High levels of PAHs throughout the urban/industriall reaches of the Reedy were initially observed in the toxicology thesis work of Everson in 1999 (provided).
23. Only after the "cleanup" of the two MGP sites was underway (2000-2003) did I put the connection together for why the PAH profile through the City was so extremely elevated.
24. Your data from your sampling program from upstream sources clearly shows these trends.

25. Interestingly, **it is not LC that is the singular reservoir for these and other CoCs, but practically everywhere one looks along the Reedy, one will find these highly elevated concentrations of CoCs**. I would expect, based on all of the data collected over the last 22 years that many undisturbed floodplain areas have similar high concentrations of these CoCs.
26. Equally important, from data I collected during 2019 at Discharge Ditch #5 at the Bramlette Site, adjacent to Willard St, and immediately upstream of the City's new Unity Park, **PAHs are clearly being continuously dischargeds every day, still.** These results are included in the 2019 report by Aquilogic.
27. **This continuous discharge has likely been the case during the operational days of the Bramlette MGP from 1917-1952, and since that plant closed in 1952.**
28. **Such a focused source(s) of PAHs for now 104 years (1917-2021), ties directly to the massive amount of PAHs that were deposited with sediment, since the LC Dam was constructed in 1892. Note that the Broad St. MGP was operational from the 1880s (?). Thus, these two plants operated and appeared to be likely sources of PAHs through the life of, and depositional record of Lake Conestee.**
29. Aerial imagery shows this **discharge from the MGP site, under Bramlette Rd, and to the discharge point to the Reedy, near Willard St has been in place since at least 1955, and likely earlier.**
30. This raises very serious questions about not only CERCLA issues, but whether this is a continuing CWA violation.

I continue to examine all of the data generated by your team's excellent work in Aug and Sep. There is much to be considered there, and I'll forward any additional insights along the way.
I'm sure no one else has been as deeply and continuously mired or immersed in these Reedy River issues for the past 25 years, so don't hesitate to send questions my way.

Last, please recognize that I am submitting all of these materials as an individual uniquely knowledgeable of the Reedy River, Lake Conestee, and the industrial history of the watershed. My interest is on behalf of

several stakeholder organizations, as I no longer have an official tie to the Conestee Foundation. These matters are of concern to the entire watershed.

Many thanks for helping us wrestle these issues to hopeful resolution soon.
Very best,
Dave

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PAHs-CPAHsinRRCorridor-HargettWorkProduct-20121...

Dave Hargett, Ph.D.

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Please Note: As of 01 January 2021 I am no longer serving as Executive Director of Conestee Foundation, Inc.